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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,144	07/24/2003	Karl W. Terry	LENST-004A	9309

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EXAMINER

ZIMMER, MARC S

ART UNIT	PAPER NUMBER
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1712

DATE MAILED: 02/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/626,144

Applicant(s)

TERRY, KARL W.

Examiner

Marc S. Zimmer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-9, 11-17, 19-21, 23, 24 and 28-34 is/are rejected.
- 7) ☒ Claim(s) 4, 10, 18, 22 and 25-27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>02/18/04</u> . | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 8-9, 11-17, 19-21, 23-24, and 28-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Terry et al., U.S. Patent # 6,342,097. Terry discloses a coating composition for imparting abrasion resistance to a substrate including plastic, metal glass, etc (column 11, lines 58-66) and especially plastic lenses. The compositions comprise an epoxy group-functionalized silane, a bis(trialkoxysilyl)alkane, metal oxide composite colloid, silane additives (column 10, lines 8-46) and solvent (column 5, lines 28-67 through column 6, lines 1-18) among other materials. Relevant to Applicant's requirement that a strong acid also be present, Terry contemplates the employment of trifluoromethanesulfonic acid as a condensation catalyst in the paragraph bridging columns 10 and 11. As to the molar ratio of the epoxy group-functionalized silane to the bis(trialkoxysilyl)alkane, the Examples disclose adding these materials in similar quantities by *weight*, which, when converted to moles, equals a molar ratio of approximately 1.56:1.

Concerning the organic functional additive (claims 12 and 23), most of the aforementioned silane additives disclosed by the reference contain organofunctional lgroups.

That is, the disclosure of silane additives by Terry fulfills Applicant's requirements for both a silane additive and an organic-functional additive.

As for claims 14-15, Terry et al. disclose the same sources of colloidal silica hence these limitations are inherently satisfied.

As for claim 17, fluorosurfactants (column 11, lines 31-33) are mentioned as one embodiment of the flow control agents that are advantageously added to the coating composition.

Method claims 19-21, 23-24, and 28-31 are anticipated by the description at column 12, lines 32-49 though coating methods other than dip-coating are outlined in column 11, lines 58-61.

Claims 1-4, 6-7, 9, 11-16, 19-21, 23-24, and 28-34 are rejected under 35 U.S.C. 102(e) as being anticipated by Takeshita et al., U.S. Patent # 6,057,039. Takeshita discloses an abrasion-resistant protective coating for a lens that comprises all of the materials outlined in column 2, lines 1-51. Where (D) is a γ -glycidoxypentyltrialkoxysilane (column 4, line 6) many incarnations of the claimed invention are anticipated. Also, insofar as (D) may embody combinations of silanes (column 4, lines 8-9) adhering to formula at column 2, lines 32-34, claims 12 and 23 are satisfied. The polyfunctional epoxy compound correlates with the organofunctional additive contemplated in claims 23 and 24. Claim 4 is anticipated by Example 10.

Regarding the method claims, Example 1 describes an approach whereby the composition is dip-coated onto a lens substrate and, thereafter, baked at elevated temperature to cure provide a cured film. In all cases, hydrolysis/condensation was performed in the presence of hydrochloric acid.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terry et al., U.S. Patent # 6,342,097. Terry is silent as to the amount of acid catalyst furnished relative the amount of the epoxy-functionalized silane reactant. Nonetheless, the skilled artisan will optimize the amount of a catalyst as a matter of routine experimentation to identify that amount needed for a sufficiently rapid and homogeneous cure. "Discovering an optimum value of a result effective variable involves only routine skill in the art." *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Claims 1-3, 6-9, 11-12, and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiota et al., U.S. Patent Application Publication No. 2001/0018129. Shiota discloses a coating composition comprising a *siloxane coating derived from* at least one silane of the types represented by formula (1) and (2) in paragraphs 11 and 13 respectively. (That is to say, the anticipatory part of Shiota's disclosure is in the description of the reaction mixture/composition used to make ingredient (A) wherein (A) is subsequently combined with other materials to make a second composition that represents the true spirit of their invention.) Relevant to the present discussion, one of the compounds mentioned as an embodiment of reactant (1) is a glycidoxy-functionalized silane (paragraph 21). Insofar as paragraph 11 states that at least one of the compounds adhering to (1) and (2) is used, a siloxane (A) derived from (1)

glycidoxypolytrialkoxysilane and (2) any of the compounds listed in paragraph 27 is at least obvious.

According to paragraphs 30-34, the silane compounds are hydrolyzed/condensed in an organic medium in the presence of a catalyst including any of those delineated in columns 32 and 33. A comprehensive list of solvents is furnished in paragraph 41.

As for claims 6 and 7, the amount of catalyst is reported in terms of its molar quantity relative to that of both silane reactants (as opposed to as a ratio of the number of moles of the epoxy-functionalized silane alone). As before, optimization of this parameter is well within the capabilities of the skilled artisan.

Because Applicant has not specified that the silane/organic functional additives are compounds different from either (a) or (b), the fact that the reference provides for an epoxy-functional silane allows a rejection to be formulated for both claims 11 and 12 in addition to claim 1.

As an aside, the Examiner appreciates that Shiota also mentions colloidal silica and surfactants among other additives, these are added to the siloxane and not the silanes from which the siloxane was prepared. Also, it is the siloxane that is coated onto a substrate and not the silane precursors.

Concerning claims 32 and 33, these claims are, in a sense, product-by-process claims because the coating is defined in terms of having been formed from a coating composition. While it is appreciated that the actual coating composition mentioned by Shiota uses a siloxane polymer instead of silane starting materials, it is the Examiner's position that the same coated article would be obtained regardless of whether the siloxane, or the silane mixture from which

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the siloxane had been prepared, were to be applied. (Formation of a coating film according to Applicant's invention entails polycondensation of the silane compounds thereby yielding the same polymer as is taught by Shiota. Shiota's method differs only in that the siloxane polymer is pre-formed.)

Allowable Subject Matter

Claims 5, 10, 18, 22, and 25-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 22, 2005

Marc Zimmer

Marc Zimmer

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